REMARKS

Claims 1-12 are pending in the application. Claims 1-12 have been rejected.

Claim Rejections Under 35 U.S.C. 101

Claims 1, 2, 4, and 6-12 have been rejected under 35 U.S.C. 101 because the language of the claims raises a question as to whether or not the claims are directed to abstract ideas that are tied to a technological art, environment or machine (e.g., computer hardware) which would result in a practical application producing a concrete, useful, and tangible result. In the Office Action at page 3, the Examiner suggests, for example, incorporating the phrase "using a computing device" into the claims to overcome the rejections.

Accordingly, Claim 1 has been amended to recite "subscribing to the published inputs and/or outputs of data objects and/or function objects generated by the users from at least one computing device on a computer network." Support for this claim language is found at least at page 18, lines 4-9 (corresponding to Fig. 4) in the specification as originally filed. As result of this subscribing step, multiple computing devices, hosting models and legacy applications, interconnect to form an emergent model. The publishing and analyzing and displaying steps in Claim 1 have also been amended to include similar limitations. Thus, the process steps set forth in Claim 1 are tied directly to computer hardware to provide a practical application and produce a tangible result. No new matter is introduced by way of these amendments. Since Claim 1 as now amended is directed to statutory subject matter under 35 U.S.C. 101, Applicants respectfully request that this rejection of Claim 1 be withdrawn.

Since Claims 2, 4, and 6-12 depend from and are limited by Claim 1, Applicants respectfully request that the rejection of Claims 2, 4, and 6-12 be withdrawn for at least the same above reasons.

Claim Rejections Under 35 U.S.C 112

Claims 1-12 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, Claim 1 has been rejected "as being incomplete for omitting essential steps, such omission amounting to a gap between the steps." Office Action, page 4. The Examiner states that the "system" recited in the first step of Claim 1 does not appear to be related to subsequent steps of Claim 1.

Accordingly, Claim 1 has been further amended to recite "subscribing to the published inputs and/or outputs of data objects and/or function objects generated by the users . . . through the system for generating an emergent model." Support for this claim language is found at least at page 7, lines 1-4 and 13-15 in the specification as originally filed. Thus, Claim 1 as now further amended makes clear that the "system" recited in the first step of Claim 1 relates to subsequent steps of Claim 1. No new matter is introduced by way of this amendment. Since Claim 1 as now further amended is definite under 35 U.S.C. 112, second paragraph, Applicants respectfully request that this rejection of Claim 1 be withdrawn.

Since Claims 2-12 depend from and are limited by Claim 1, Applicants respectfully request that the rejection of Claims 2-12 be withdrawn for at least the same above reasons.

Claim Rejections Under 35 U.S.C. 103(a)

Claims 1-7, 9, and 11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record, "Modeling and Evaluation of Product Design Problems in a Distributed Design Environment" by Pahng et al. (hereinafter "Pahng") in view of U.S. Pat. No. 6,898,791 to Chandy et al. (hereinafter "Chandy").

Applicants provide a method for mapping business and engineering processes. Users are given access to a system for generating an emergent model. The emergent model is formed of one or more models where a model includes one or more data objects and/or function objects generated by the user. Specification, page 7, lines 16-17. The models are collections of computer instructions and data that present an interface for

describing the behavior of part of the system being modeled, such that the interface is understood by other parts of the system being modeled. Specification, page 7, lines 13-15. Some of the objects may be model inputs and/or model outputs made available to relate various models to one another. Specification, page 7, lines 18-19. The objects are implemented using standard distributed object management techniques (e.g., CORBA, DCOM). Specification, page 8, lines 19-20.

Interdependencies or relationships within a model are defined using the function objects. Function objects provide emergent behavior by providing solvable expressions that relate data objects and function objects. Specification, page 10, line 28 through page 11, line 4. The expression may be thought of as a function with multiple inputs and outputs, which is evaluated by a solver. The inputs and/or outputs of the data objects and/or function objects generated by users are independently published and subscribed to from computing devices on a computer network, whereby a network of linked data objects and/or function objects emerge to form an emergent model. Specification, page 23, lines 3-5. The network of linked data objects and/or function objects are then analyzed and displayed to create a map of the business and engineering processes.

Pahng describes a Distributed Object-based Modeling and Evaluation (DOME) framework. According to this framework, a design problem model is decomposed into objects or modules and relationships among modules are defined. Pahng, page 7, column 2. These modules are distributed over computer networks and communicate via a standard network protocol such as CORBA. Pahng describes the implementation layer of the DOME framework at page 6, column 2 as follows:

> A distributed interface is wrapped around the group of standard OME modules (A and B in figure 9) to allow the local and distributed modules to communicate with each other. This distributed module's external interface now offers service calls to and from the remote module. A design problem model sees the distributed module as a separate application that is capable of providing services upon request.

In sum, Pahng discloses a framework that allows local and distributed modules to communicate with each other.

Chandy describes a distributed system framework for a networked environment including multiple process objects. Each process object includes: (i) a program method for creating at least one inbox, (ii) a program method for creating at least one outbox, and (iii) a program method for interconnecting each created outbox of the process object to a created inbox of at least one other process object. *See* Chandy, Abstract. In this way, a personal network is established between the process object and the at least one other process object "within a communication session to perform at least one task by passing messages between the interconnected outboxes and inboxes." Chandy, Abstract.

Neither Pahng nor Chandy, alone or in combination, teaches an emergent model including one or more models that describe the behavior of a system being modeled and/or evaluate the system being modeled. In particular Pahng and Chandy fail to teach generating function objects that define interdependencies within a model by providing solvable expressions that relate data objects and/or function objects. Pahng simply provides a framework that allows local and distributed modules to communicate with each other. Chandy similarly provides a framework to establish personal networks among process objects. Thus, neither Pahng nor Chandy, alone or in combination, provides function objects that include solvable expressions relating other data objects and/or function objects. Claim 1 has been amended to include the above limitations which neither Pahng nor Chandy, alone or in combination, teaches ("the emergent model including one or more models . . . that describe behavior of a system being modeled and/or evaluate the system being modeled, . . . at least some of the data objects and/or function objects being model inputs and/or model outputs, at least some of the function objects . . . providing solvable expressions that relate data objects and/or function objects"). Support for these claim amendments is found at least at page 7, lines 13-19 and page 10, line 28 through page 11, line 4 in the specification as originally filed. No new matter is introduced by way of these amendments.

Because neither Pahng nor Chandy, alone or in combination, teaches, suggests or otherwise makes obvious every claim limitation of now amended Claim 1, Applicants respectfully request that the rejection of Claim 1 be withdrawn.

Since Claims 2-7, 9, and 11 depend from and are limited by base Claim 1, Applicants respectfully request that the §103 rejection of Claims 2-7, 9, and 11 be withdrawn for at least the same above reasons.

Claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Pahng and Chandy as applied to Claim 1, and further in view of "Web based collaborative visualization of distributed and parallel simulation" by Bajaj et al. (hereinafter "Bajaj").

Bajaj teaches an interaction model to support collaborative scientific visualization defined as "a collection of visualization users who wish to share the results and control of their simulations and visualizations." Bajaj, page 48. The interaction model is composed of two or more DSAV loop models. Bajaj describes the DSAV loop model as "[a] work project in the simulation environment . . . viewed as a loop of activity with each basic component receiving information from the previous member of the loop and providing information to the next loop component." Bajaj, page 49. The basic components of the DSAV loop model include Data sources, Simulation servers, Analysis tools, and Visualization clients. The interaction model is constructed by making connections between the basic components of different DSAV loops. Thus, the interaction model can provide for the distributed visualization of simulations and distributed simulation.

In sum, Bajaj teaches collaborative scientific research through the use of collaborative visualization of other's use of simulation and analysis tools. Claim 8 depends from base Claim 1. Pahng and Chandy are argued above and those arguments similarly apply here. Bajaj does not add to Pahng or Chandy the claimed "emergent model including one or more models . . . that describe behavior of a system being modeled and/or evaluate the system being modeled, . . . at least some of the data objects and/or function objects being model inputs and/or model outputs, at least some of the function objects . . . providing solvable expressions that relate data objects and/or function objects" of the present invention. Since the prior art references (Pahng, Chandy, and Bajaj) when combined do not teach, suggest or otherwise make obvious all

the claim limitations of now amended base Claim 1, Applicants respectfully request that the §103 rejection of Claim 8 be withdrawn.

Claims 10 and 12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Pahng and Chandy as applied to Claim 1, and further in view of "Firewalls Complete" by Goncalves.

Claims 10 and 12 depend from base Claim 1. Pahng and Chandy are argued above and those arguments similarly apply here. Goncalves does not add to Pahng or Chandy the claimed "emergent model including one or more models . . . that describe behavior of a system being modeled and/or evaluate the system being modeled, . . . at least some of the data objects and/or function objects being model inputs and/or model outputs, at least some of the function objects . . . providing solvable expressions that relate data objects and/or function objects" of the present invention. Since the prior art references (Pahng, Chandy, and Goncalves) when combined do not teach or suggest all the claim limitations of now amended base Claim 1, Applicants respectfully request that the rejections of Claims 10 and 12 be withdrawn.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (Claims 1-12) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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